

Coping with Health-Related Stressors and Normative Losses Associated with Aging Proactively: Residential Relocation in Later Life

Loren D. Lovegreen*

Department of Gerontology, Simon Fraser University at HC, 515 West Hastings St., Vancouver, BC, V6B 5K3, 778-782-7662, Canada

Abstract: Purpose: Investigations of health and wellness in later life tend to be through a lens of dependency with the primary focus on deficits, loss and decline. Much less attention has been focused on the creative, adaptive and proactive aspects of aging and health within the context of residential relocation. This study explores the extent to which older adults employ proactive strategies to enhance person-environment fit and how these strategies interact with demographic and health characteristics.

Design and Methods: We employ annual data (1990 – 2000) from the Florida Retirement Study, a panel study which focuses on late-life adaptation of older adults residing in an active living retirement community (n=601). Logistic regression techniques were used to test the relative influence of the predictors (i.e., demographic characteristics, health status, social resources and proactive strategies) in predicting the likelihood of moving over a ten year period.

Results: Findings confirm prior research that female gender, older age, shorter housing tenure and poorer health are all predictors of moving. We also found that planning for future care and marshalling social support influence the likelihood of moving. This suggests that older adults, even when faced with stressors associated with aging, engage in proactive strategies as a means of achieving person-environment congruence.

Implications: Moving is a key and often overlooked option that older adults can exercise in order to enhance quality of life. Developing interventions that increase proactive strategies of older adults may bolster personal competency and ultimately contribute to person-environment congruence.

Keywords: Residential mobility, person-environment fit, proactive coping.

INTRODUCTION

Scientists project that current mortality and longevity trends will continue over the next several decades, with mortality rates declining and life expectancy increasing [1,2]. There is also evidence for declining disability rates among the elderly population [3]. Thus, it is no surprise that concepts of healthy aging and quality of life have emerged as an important focus in gerontological research in recent years [4-7]. On the one hand, it may be argued that aging well is an impossible feat when coping with disease and disability. Yet, on the other hand, many older adults lead vibrant, productive and fulfilling lives despite changes in health and disruptive life events [8,9].

Many facets of healthy aging and quality of life have been explored in the literature, ranging from psychosociological [10-12] to biological [13] perspectives. However, much less attention has been given to “aging well” within the context of illness and frailty. Few studies have focused on residential relocation as an attempt by older adults to maintain their quality of life. Even fewer studies have focused on residential relocation as a major adaptive response of older adults to health-related stressors and

normative losses associated with old age. This paper takes on this challenge by exploring the extent to which older adults (who previously migrated at retirement age to the Sunbelt) employ proactive strategies to enhance person-environment fit and how these strategies interact with demographic and health characteristics.

Despite the positive trends in health and longevity discussed above, nearly nine out of ten older adults have at least one chronic disease [14]. Furthermore, chronic disease and increasing frailty is associated with advanced age; the average 75 year-old has three chronic conditions and takes five prescribed medications [15]. Chronic disease is also associated with difficulties in carrying out day-to-day tasks [16], with greater impairment serving as an impetus for many older adults to make adjustments and modifications in their daily lives to accommodate their changing health needs. Strategies include making home modifications (e.g., installing walkway ramps, grab bars), enlisting social support from family and friends, or when health needs overwhelm available resources, moving to more supportive living environments (e.g., assisted living facility).

A central question arises when we consider older adults who have migrated at retirement age to the Sunbelt and how they might fare in the quest to age well when faced with threats to their independence. Do they face particular challenges when their health begins to worsen given that they have left behind their “lifetime” social support networks?

*Address correspondence to this author at the Department of Gerontology, Simon Fraser University at HC, 515 West Hastings St., Vancouver, BC, V6B 5K3, Canada; Tel: 778-782-7662; Fax: 778-782-5066.
E-mail: loren_lovegreen@sfu.ca

One might argue that it is likely that social ties “back home” could weaken, and in some cases become “deactivated” owing to passage of time, geographic distance and decreased competency in marshalling support. So we might ask, given that a move to a retirement community is a strong commitment to a distinct lifestyle that has been planned for over many years, what strategies do these Sunbelt migrants engage in and how do these strategies influence whether a move is undertaken in response to stressors? Alternatively, to what extent do Sunbelt retirees exercise agency (e.g., proactive strategies, enlisting social support) when faced with stressors associated with later life (e.g., declining health, widowhood)?

In order to explore these questions, the present study utilized longitudinal data from a sample (n=601) of older adults residing in an active-living retirement community located on the west coast of Florida. The goal of the study was to examine the relative influence of demographic characteristics, health factors, personal resources (e.g. availability of social support) and proactive strategies (e.g. planning for future care) in predicting the likelihood of moving over a ten year period. Person-environment fit theory was utilized as the theoretical framework for understanding the role of agency in later life within the context of health and housing. We suggest that residential moves made to overcome person-environment incongruence constitute a prototype of exercising human agency (e.g., marshalling support, planning for future care) within the constraints of social structure (e.g., income, education, homeownership) and environmental demands (e.g., characteristics of residence).

THEORETICAL FRAMEWORK AND BACKGROUND

Older adults represent just 3.4% of all movers [17]. Moreover, older adults prefer to age in place [18,19], even when frail [20]. Yet, many older adults move, and often do so when their housing no longer meets their needs.

The *ecological model of adaptation and aging* [21] provides a useful theoretical framework for understanding later life residential relocation. This model has been used to explain various aspects of residential change in later life, including *forced relocation* [22, 23], *moving to institutional living* [24], and *housing satisfaction* [25]. Based on the ecological model (and the larger concept of person-environment fit theory), individuals engage in an ongoing assessment of their external stressors and personal needs, and are ultimately motivated to maintain balance between internal states (i.e., sensory, cognitive, perceptual states) and external stimuli (i.e., environmental demands). This balance, or homeostasis, is mediated by the person’s competence (e.g. the physical, mental, and emotional capabilities). The result of the interaction between environmental press and competence is adaptive behavior. Later developments of the model incorporate the concept of congruence [26, 27]. Central to congruence is that preference varies by person and environments vary in the ability to meet desired needs/preferences of the individual. Adaptive behavior is the mechanism through which congruence is achieved or maintained.

Applying the ecological model to residential relocation in later life, congruence is achieved by one of three means, (1) altering environmental press, (e.g., modifying one’s home

such as installing a ramp or handrails or arranging in-home services), (2) reordering one’s hierarchy of preferences (e.g., I will live with my daughter to maintain a sense of independence, even though I prefer to live alone), or (3) by leaving the environment (moving to a more supportive environment such as an assisted living setting or a nursing home) [26, 28, 29].

Demographic Predictors of Moving in Later Life

The literature on demographic predictors of residential moving in late life has produced mixed results. Some studies indicate movers are more likely to be older and female than non-movers [30, 31], whereas others report that neither age nor gender influence moving [19, 32, 33]. Yet others argue that residential stability is dependent upon age, with the oldest-old experiencing the greatest residential instability [34].

Conflicting results may be attributable to the fact that move-related outcomes are conceptualized differently across studies. For example, age and gender may differentially impact outcomes such as “planning to move” versus “actual moves” or the type of residence moved to (e.g., nursing home). Another reason for inconsistent results may in part relate to the fact that age and gender are intricately linked: females are more likely to outlive males, and as result, they are less likely to be married and, thus, live alone. Furthermore, living alone is predictive of nursing home placement [35]. As such, we would expect to find a greater percentage of nursing home residents to be older women than older men. In fact, women are three times more likely to reside in a nursing home than men [36].

The impact of SES on moving has produced less equivocal findings; movers are more likely to be older, poorer and to live alone than non-movers [30]. On the other hand, we also have empirical support for a positive relationship between SES and moving when we consider intention to move rather than “actual” moves [19, 32]. As with age and gender, SES may differentially impact move-outcomes based on how moves are defined and measured. Nonetheless, ability to make a residential move necessitates some degree of financial means and may preclude some to express intent to move, but when faced with a health crisis or other critical events, a move may override personal preference. Few studies report a significant association between education and the likelihood of moving. However, non-significant trends show that in general, movers tend to report lower education levels than non-movers [30, 31].

As found with other demographic characteristics, conflicting results characterize the relationship between living arrangements, marital status and moving. For example, research shows that movers are more likely to be married (and living with their spouse) [31]. Whereas, other research indicates that movers are more likely to live alone [33], are widowed [30, 37-39] or are widowed *and* living alone [32], especially when predicting moves to a nursing home [40]. Yet others, report that living arrangements have no predictive power [19]. Arguably, living arrangements is closely associated with marital status, and as a result, it is difficult to disentangle the independent effects of living arrangements and marital status—particularly when we note that spouses often serve as the primary source of social support and caregiv-

ing—a resource that may make the difference in being able to remain in one’s home.

Parental status and proximity to adult children increase the likelihood of moving in later life, with movers less likely than non-movers to have children living nearby [33]. Thus, having children and having them close by may serve to “anchor” aging parents to their homes. Anchoring to one’s home is also reflected in the length of residency and homeownership, with both strongly predictive of who is likely to move. Renters and shorter residency tenure are associated with moving [34, 41, 42]. In fact, housing tenure is often used as a proxy measure for assessing “place attachment” or the affection one has for one’s home, community, or neighborhood. In this sense, the stronger the ties to a place, the more likely one will remain in that residence [33, 43]. The propensity to “not move” may be explained in part by the “principle of cumulative inertia” [44], which states that the probability of remaining in a current social state increases as a direct function of prior time spent in that state. Thus, it is reasonable that older adults, who live in their homes for greater periods of time, are less likely to make a residential move than their younger counterparts.

Health Status Predictors

On the surface it appears that the relationship between health and moving is straightforward, with those being sicker more likely to move. Extensive research exists that supports this claim, particularly when predicting moves to institutional settings. Risk factors associated with moving from a community residence to a skilled nursing facility include, dementia, and difficulty performing IADL and ADL [35]. Moreover, research also reports that declining cognition, regardless of a dementia diagnosis, [45] predicts moving to a nursing home.

Upon closer examination, however, we note that the relationship between health and moving is a complex relationship. For example, we have evidence that physical impairment (i.e., ADL difficulty) has an independent influence on moving; the greater the difficulty with performing personal tasks such as grooming, toileting and eating, the more likely a move is made [46]. On the other hand, research indicates that health status alone is not a significant predictor of moving [31]. Others argue that health is predictive when we consider the relationship within the context of income. For instance, Speare *et al.* [46] found that low income older adults who are in better health were more likely to move than those in poorer health. Additionally, Pastalan [47] found that older adults who were wealthier and healthier were more likely to move. Yet others, such as Colsher & Wallace [30], found when controlling for age and gender, movers were more likely to report poorer physical functioning (i.e., difficulty in performing ADL), more doctor visits, greater levels of depressive symptomatology, and lower levels of life satisfaction.

It appears that the relationship between health and residential mobility is unclear; in part because of the contradictory influence which poor health can have on relocation. First, poor health may facilitate movement. When in poor health, older adults may move to more supportive residential settings in order to meet their care needs [48]. Alternatively, poor health may impede moving since people in poorer

health may not want to move away from familiarity, comfort, and security; despite the need for more suitable housing [49]. Contradictory results may also be present because most studies utilize only one or two measures of health status [46, 48]. Including a full spectrum of health measures that include mental and physical impairment would be useful, particularly since physical and mental impairment frequently coexist [50, 51].

In addition to the measures of health noted above, falling and balance difficulties are also important indicators of moving. Research consistently demonstrates that falling may have serious health consequences [52], leading to fractures, functional decline and even death [53]. Falling is often used as an indicator of frailty [54, 55] and is predictive of subsequent institutionalization [56]. Moreover, frequent falling can play a pivotal “role in accelerating a downward spiral” for an older person [56, p. M492].

Social Resources and Proactivity: Coping, Planning for Future Care, and Social Support

Social support has been shown to mediate stressful life events [57, 58], and to be an indicator of social integration [59], thereby contributing to well-being [60]. Having someone to turn to (e.g., close friend or confidante) can be beneficial in reducing the effects of a stressful event or situation [59]. Social support may also be an important factor in the investigation of moving in later life. For example, having strong supportive ties to family or friends may influence an older person to remain in an area or home, even when health or life crises occur. In fact, research indicates that having an adult child living in the area reduces the likelihood of an older person moving [33] as children, particularly daughters, are the most common providers of social support and of caregiving second only to spouses [48, 59, 61].

Research suggests that the use of social support when conceptualized as proactive coping can assist us in understanding how people manage stressful events, and especially how they utilize information obtained from others [62]. For example, based on social comparison theory, individuals require consistent, accurate appraisals of themselves [63], and when objective, non-social benchmarks are unavailable, they seek out the others who are both “socio-culturally” and “situationally” similar [64]. In this sense, “coping assistance” occurs when similar others suggest coping techniques for the seeker to adopt. The concept of coping assistance, specifically the frequency to which older adults engage in this behavior, may be particularly helpful when applied to moving. Turning to similar others for advice may allow the person to adopt coping techniques that will facilitate the action under consideration (e.g., not moving). For instance, a friend who recently went through a similar experience may suggest relying on volunteers or to use transportation services of the local senior center, rather than moving to another residence.

Proactive planning as an explanatory variable has received much less attention than health status, demographic characteristics or social support in predicting who moves in later life. Studies that have focused on planning by older adults have tended to examine two main areas: planning for retirement and end-of-life advance directives. Only recently have researchers investigated broader measures of proactive

behavior patterns such as planning for future care needs [65, 66]. This body of work reveals that older adults are not likely to plan for their long-term-care needs [65-67] and if they do make plans, they tend to underestimate their needs [68]. Factors associated with non-planning include thinking that things will improve, believing that planning for the future is useless and not wanting to see one self as vulnerable [67]. Yet other research demonstrates that older age and greater difficulty performing ADL and IADL's is predictive of making concrete plans for future care [69]. This suggests that viewing oneself as "dependent" or becoming dependent may act as a motivating force to take action to make plans for needs that appear inevitable.

METHODS

Sample

Data for this research are from the Florida Retirement Study, a panel study which focuses on late-life adaptation of community dwelling older persons [70]. Eligible respondents met three criteria: (1) they were age 72 or older, (2) living in Florida at least 9 months of the year, and (3) healthy enough to complete a 90-minute face-to-face interview (see [71] for details on sample recruitment). Baseline data collection occurred in 1990 (N=1000). Respondents have been interviewed annually since then. After baseline, the study has continued to follow respondents who moved, including those who relocated to other cities or entered nursing homes or assisted living facilities. This study utilizes annual data (n=601) from the first ten years of the study (Wave 1 through Wave 10).

From the original sample of N=1000, we excluded respondents who had incomplete panel data (i.e., no annual data from Wave 2 through Wave 10) (n=225) and who lived in a different retirement community from the majority of respondents (n=87). Couples were also excluded. There were 87 couples in the original study, of which we randomly selected only one respondent per couple (n=87), yielding a total of 601 study respondents.

A respondent was considered a "mover" if they made a permanent change in their residence and moved out of the retirement community. A move could occur anytime 10 years post-baseline (Wave 2 through Wave 10). Addresses were tracked for each year for the length of the study period (censoring for data owing to death, refusal, or loss to follow-up). Just under one-half (46.5%) of the sample died by the end of the study period (mean time to death = 6 years; std. dev. = 2.6). While the majority of our sample did not have right-censored data (78%), we recognize that not all respondents had an equal opportunity to make a move during the study period. Thus, movers in our sample are conservatively estimated. However, we did adjust each logistic regression model for nonrandom attrition (see Analysis section).

MEASUREMENT AND ANALYSIS

All predictors were measured at Wave 1. The outcome of interest, *residential move out of the retirement community*, was measured as a dichotomous variable (0 = no, did not move; 1 = yes, moved). The first move out of the retirement community was the focus of the current study. The move could occur anytime over the study period (i.e., post baseline through Wave 10). First moves were the focal outcome vari-

able as our primary interest was to determine the relative importance of health, social and proactive factors in predicting the likelihood of moving out of a retirement community setting within the context of seeking person-environment fit congruence.

Predictors

Demographic characteristics were measured by standard interview questions and included: age (years), gender (female=1), education (years), income (under \$15K=1 versus \$15K and greater=0), marital status (married vs. not married), living arrangements (alone=1, with spouse/other=0), parental status (has at least one child=1 vs. childless=0) and proximity of family living in state (yes, had at least one family member living in Florida=1 vs. no=0). Assessments of homeownership (rent=1 vs. own=0) and housing tenure (years in current home) were also included. As widowhood was acknowledged as a potentially important explanatory variable, a variable was created indicating if a respondent was widowed within two years of the baseline interview (yes=1; no=0).

Health status was assessed using four measures: functional limitation, cognitive impairment, self-rated physical health and falls. *Functional limitation* was measured by the OARS Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) Index [72, 73]. To assess IADL levels, respondents were asked a series of three questions reflecting their difficulty with carrying out the following activities: (1) doing your own housework, (2) preparing your own meals, and (3) shopping for groceries. Items were summed and divided by three to retain the response metric, with a possible range of 1 (no difficulty all items) to four (always, all items). ADL functioning was assessed through the use of five questions asking respondents to what extent they are having trouble with personal tasks such as (1) washing and bathing, (2) dressing and putting on shoes, (3) getting to or using the toilet, (4) getting in/out of bed unassisted and (5) eating without assistance. The same procedure used to create the IADL index was utilized to create the ADL index.

Falls was measured by a single item: "In the past year, have you experienced any falls?"(yes=1; no=0). The Short Portable Mental Status Questionnaire (SPMSQ) was used as a screening method to assess for *cognitive impairment* [74] at baseline. Respondents were asked a series of ten questions (e.g., "What day of the week is it?", "What year is it?", "What is the name of the president?"). Incorrect responses were coded as (1) and correct responses as (0). Incorrect responses were counted. A dichotomous variable was created. Respondents with scores of "no errors" were coded as 0; all others were coded as 1.

Subjective health was assessed at baseline by a three-item scale. The items include, (1) "In general, do you consider yourself a very healthy, healthy, fairly healthy, sick or very sick person?", (2) "In general, considering your health over the past year, would you say your health is excellent, good, fair, poor or very poor?", and (3) "Compared to other people your age, would you say that your health is much better, better, about the same, worse or much worse over the past year?". Two items were reverse coded. All items were summed to create a subjective health score ranging from

poor (1) to excellent (5). Higher scores reflect greater levels of subjective health. Alpha reliability for this scale = .80.

Social Resources and Proactivity

Social resources were measured by two domains: *availability of social support* and *social support received from friends and family*. The measure of *availability of social support* was assessed by a single dichotomous item, "Do you have at least one person you can trust to share your feelings thoughts and concerns with?" (1=yes; 0=no). *Social support received* was measured using the ECRC Received Support Scale [75]. This scale assesses instrumental support received from family and friends. Separate scales were created for support received from family and from friends. Instrumental social support received from family, consists of a 4-items scale (e.g., help with transportation, cooking, cleaning, and personal help), with possible response categories ranging from never (1) to always (5). A higher score reflects greater instrumental support received from family. The Cronbach's alpha reliability for this scale = .87. Instrumental social support received from friends was created in the same manner, with the exception that the scale included three, rather than four items (i.e., received help with cooking was eliminated from the scale since the alpha reliability without the item ($\alpha=.73$) was higher than with the item included in the scale ($\alpha=.68$)).

Proactivity was measured by three domains: 1) *marshalling support*, 2) *planning for future care*, and 3) *coping assistance*. The assessment of *marshalling support* or the degree to which a person is reluctant or comfortable in turning to others for help is measured by two items. The first item asks respondents, "How easy do you find it to ask others for help?" The second item asks, "How easy do you find it to talk to others about your problems?" Items were summed, with a possible range from 2 (not much on both items) to 10 (very much on both items). *Planning for future care* was measured by one item, "Have you thought about or made plans about your care if you were to become disabled" (1=yes; 0=no). *Coping assistance* was measured by a single item, "When confronted with stress, I ask people who have similar problems what they did", with response categories ranging from (1) never to (5) very often. Thus, higher scores reflect greater frequency of asking others for help.

ANALYSIS

Data were screened at the univariate and bivariate level to allow for the identification and resolution of data peculiarities, thereby promoting statistical robustness at the multivariate level [76]. The statistical software package, SPSS version 17.0 was utilized for all data analysis [77].

Zero-order correlations were computed to determine the degree of relationship between predictors and the outcome variable. A minimum of 10 cases per parameter in the model was used in order to produce reliable estimates and to be able to converge on a solution [78]. Also, crosstabs were run to ensure that cells formed by categorical independent variables had cell frequencies of at least one case or more and that no more than 20% of cells have fewer than five cases.

Logistic regression was used to test the relative influence of the predictors (i.e., demographic characteristics, health status, social resources and proactive strategies) in precipitat-

ing a move by study respondents. This statistical approach is appropriate when the dependent variable (e.g., moved [yes/no]) is a dichotomous variable and when predictors are a mix of categorical and continuous variables [79].

A three-step model was utilized to estimate the odds of making a move. Variables were input based on theoretical linkages to the other variables in the model. Variables were entered in the model in the following order: The first block (model) included demographic variables (e.g., age, gender, education, income)¹. The second model, added each of the health status variables (e.g., physical and cognitive impairment, falling, self-rated physical health). The final model included the proactive resource variables (e.g., marshalling support, planning for future care, and assistance coping).

Each model was adjusted for nonrandom attrition using a hazard rate instrument based on the inverse Mills ratio expressing the likelihood of not remaining in the study for all study waves [80]. A probit equation estimates the likelihood of completing all waves of the study. Based on that likelihood, an inverse Mills ratio is calculated for each case so that high values reflect a strong likelihood of not completing the study. This variable is entered into the model as a covariate [81]. Thus, our results are most likely conservative estimates of both the prevalence of moving as well as the predictive power of our independent variables.

RESULTS

Just over one-half (52.1%) of respondents moved out of the retirement community during the study period (Wave 3 to Wave 10). Descriptive statistics for the sample are presented in Table 1.

Table 1. Demographic Characteristics of Sample (N=601)

	M (SD)
Age (72 – 95 yrs)	78.6 (4.1)
Education (6 – 23 yrs)	13.7 (2.5)
Housing Tenure (1 – 26 yrs)	11.2 (5.7)
Marital Status	Percentage
% married	43.9%
% widowed	49.9%
% divorced or separated	2.5%
% never married	3.7%
Recently Widowed (% yes, prior 2 yrs)	10.0%
Gender – Female (% yes)	66.9%
Income - Less than \$15K (%)	22.8%
Living Arrangements (% alone)	55.6%
Has Child(ren) (% yes)	78.0%
Owns Home (% yes)	86.4%
Has Family Living in Florida (% yes)	43.4%

¹Ten (3.8%) married respondents did not live with their spouse at baseline. A decision was made to exclude marital status and include living arrangements (lives alone; yes=1, no=0).

The majority of participants were female (66.9%), not married (56.1%), lived alone (55.6%), had at least one child (78%) and had a high school degree or higher (88.9%). With respect to race/ethnicity, all participants were Caucasian. Just over one-fifth (22.8%) reported an annual income of less than \$15,000. For this sample, the mean age was 78.6 years (SD=4.1; range=72 to 95) and the mean number of years living in their home at baseline (Wave 1) was 11.2 years (SD=5.7). A majority (86.4%) of participants owned their home; no one owned a second home. Less than half (43.4%) reported having a family member living in Florida at baseline.

A three-step logistic regression was used to predict the likelihood of moving based on demographic characteristics,

health status, social resources and proactive strategies. Table 2 shows the logistic regression coefficient (β), standard error and odds ratio ($Exp(B)$) for each predictor in the model. The first model examined only the demographic variables, of which age, gender, education and housing tenure were statistically significant. Increasing age, higher education and female gender (compared to male gender), were significant predictors of moving. The odds of moving increase 6% for each unit increase in age (year), 11% for each additional year of education and increase by a factor of 3.14 for women compared to men. In contrast, the longer a respondent lived in their home, the less likely they were to move (compared to those with less housing tenure). The odds of moving decrease by 6% for each additional year a respondent lived in their home. The model yielded a -2 log likelihood of 774.219

Table 2. Logistic Regression Results. Demographic Characteristics, Health Status and Proactivity Predictors of Residential Relocation

	Model 1			Model 2			Model 3		
	<i>b</i>	<i>SE</i>	Exp (B)	<i>b</i>	<i>SE</i>	Exp (B)	<i>b</i>	<i>SE</i>	Exp (B)
Demographic Characteristics									
Age (yrs)	.058	.022	1.06**	.057	.023	1.06**	.054	.023	1.06*
Gender (female=1; male=0)	1.142	.203	3.14***	1.167	.206	3.21***	1.129	.210	3.12**
Education (yrs)	.107	.036	1.11**	.107	.037	1.11**	.095	.037	1.10**
Income (<15K=1, else=0)	.335	.224	1.40	.263	.229	1.30	.206	.232	1.25
Has Children (yes=1; no=0)	.338	.213	1.40	.359	.216	1.43	.315	.218	1.44
Lives Alone (yes=1; no=0)	-.069	.201	.93	-.033	.211	.99	-.107	.264	.898
Recently Widowed (yes=1; no=0)	-.015	.301	.985	-.040	.305	.961	-.047	.309	.954
Home Ownership (yes=1; no=0)	.103	.284	1.11	.112	.288	1.12	.061	.291	1.06
Housing Tenure (yrs)	-.058	.017	.94***	-.059	.017	.94**	-.060	.018	.94**
Family in Fl (yes=1; no=0)	-.051	.176	.95	-.093	.179	.91	-.064	.182	.94
Health Status									
ADL Scale (>score, >impairment)	--	--	--	.174	.528	1.20	.246	.528	1.28
IADL Scale (>score, >impairment)	--	--	--	-.045	.251	.96	-.059	.253	.94
Cognitive Impair. (yes=1; no=0)	--	--	--	.299	.271	1.35	.281	.276	1.32
Falls (yes=1; no=0)	--	--	--	.390	.219	1.48	.403	.222	1.50
Self-rated Phys. Health (>#, >health)	--	--	--	-.334	.146	.72*	-.327	.148	.72*
Social Resources and Proactivity									
Support Rec'd-Family (>score, >support)	--	--	--	--	--	--	-.028	.092	.972
Support Rec'd-Friends (>score, >support)	--	--	--	--	--	--	.102	.176	1.11
Has Confidante (yes=1; no=0)	--	--	--	--	--	--	-.325	.342	.722
Planning for Future Care (yes=1; no=0)	--	--	--	--	--	--	.550	.181	1.73**
Coping Assistance (>#, >coping skills)	--	--	--	--	--	--	.085	.086	1.09
Marshalling Support (>#, >marshalling)	--	--	--	--	--	--	-.100	.050	.91*
Mortality λ	-.007	.400	.993	-.399	.528	.672	-.386	.542	.680
Constant	-6.373			-4.928			-4.088		
-2 Log likelihood	774.219			763.577			747.030		
Nagelkerke R Sq.	.123			.144			.176		

and a Nagelkerke R^2 of 12.3%, indicating a significant improvement from the initial model (i.e., block 0), whereby no predictors are included.

Model 2 added in the health status predictors (i.e., physical limitation, cognitive impairment, falls, and self-rated physical health). The model was significant ($X^2(16) = 38.55$) and more accurately fit the data ($-2 \log \text{likelihood} = 763.577$; Nagelkerke $R^2 = 14.4\%$). Each of the demographic variables that were significant in model 1 remained so in model 2. Of the health status predictors, only self-rated health emerged as a statistically significant predictor. The odds of moving decrease 28% for each unit increase in self-rated health. Falling in the prior year, while not significant at $p < .05$, was marginally significant ($p = .06$), with fallers (compared to non-fallers) 1.5 times more likely to move. Physical limitation and cognitive impairment failed to be significant predictors of moving.

Model 3 included social resources and proactivity variables. The model was significant ($X^2(22) = 85.09$), and contributed to a better fit model ($-2 \log \text{likelihood} = 747.030$; Nagelkerke $R^2 = 17.3\%$). Demographic and health variables significant in model 2 remained statistically significant. While the social support variables were not significant, two of the proactive behaviors (i.e., planning and marshalling support) emerged as significant. For planners compared to non-planners (for future care) the odds of moving increase by 1.7 and the odds of moving decrease by 11% for each increase in unit of change in marshalling support (i.e., each unit increase is associated with greater ease in marshalling support).

DISCUSSION

Most people desire to live a life that is disease and disability free for as long as possible and to maintain their independence even when they have health conditions that threaten their ability to live independently. In this study we examined a unique panel-study dataset which allowed for exploring predictors of residential moves undertaken by elderly migrants moving out of an active living retirement community. Our sample consisted of older adults who have previously made an amenity move to an active-living adult community, allowing us to explore first moves out of a retirement community in response to changing health needs and life circumstances. Our data also provided an opportunity to explore the role that proactive strategies employed by older adults as they face health stressors, functional impairment and frailty.

Prior research relating to demographic predictors of moving suggests there may be a cumulative effect in terms of structural factors associated with moving in late life, with those with less resources (older age, widowed, renters, lower income, living alone) and females, having a greater probability of moving. Our research lends only partial support for this stated relationship. We found, as others have, women (compared to men) had a much higher probability of moving as did those who were older. We also concur with prior research that longer housing tenure ($p < .01$) and having children ($p < .06$) predict the likelihood of moving. Two proactive strategies, planning for future care and marshalling support, were also found to be important predictors of moving. Unexpectedly, we found that those with higher levels of education

were *more likely* to move, *not less likely*—as some research suggests [33].

There were other unanticipated findings. We expected to find that living alone, being recently widowed, renting, not having family living near by and having a lower income would each predict moving. However our results did not support these associations. Our limited support for a cumulative effect of fewer demographic resources on moving may be in part related to how we defined our dependent variable. We used a dichotomous (yes/no) of whether a move took place at least once, over the course of the study (ten years post baseline). Since we were most interested in understanding factors predicting the likelihood of leaving a retirement community setting, it is logical that we investigate “first moves”, or first moves since moving into the retirement community. However, future research may want to consider using an outcome such as the type of move made (e.g., no move, institutional move, non-institutional) as this may further elucidate the relationship between demographic characteristics, health status and proactive strategies in late life relocation. When the type of move is considered, it may help us understand why a variable such as income, when coupled with different demographic variables (e.g., income and living alone vs. income and home ownership) produces differential outcomes. For example, income and living alone are important predictors when determining institutionally-based moves [35] whereas home ownership and income are salient predictors of moving into a retirement community or a continuing care retirement community [82].

In our study, recent widowhood was not a significant predictor of moving. One potential explanation for this may relate to how we measured “recent widowhood”. We coded “recently widowed” as occurring if the event happened within two years of baseline. It may be that our time frame of 2 years was not adequate. Timing of when one becomes a widow in relation to moving may be an important element in predicting moving. In fact, Chevan’s [38] research indicates that being newly widowed is more predictive of moving than having been a widow for a period of time. Thus, we may need to explore how the length of time in a particular role, such as widowhood, in turn impacts whether one is likely to move. On the other hand, it may not be the length of time spent “as a widow” that spurs a move, but the appraisal of the degree to which the event overwhelms the older person’s competency to achieve person-environment congruence.

Appraisals of stressors have heuristic value in predicting diverse outcomes in other stress-based research. For example, Hobfoll and colleagues [83] state that it is not the objective qualities of an event that fundamentally makes it a stressor, rather it is the individual’s appraisal of the stressor and the ability to draw on resources that is most crucial. Appraisals of other life events such as hospitalization and falling may also serve as potentially important explanatory variables for predicting who is likely to move. In fact, the one health appraisal measure included in our study, *self-rated physical health*, emerged as the single significant health-related predictor of moving, with those in better health (compared to those in worse health) less likely to move.

How might we understand these findings? Perhaps the status of health (e.g. poor vs. good) is less important than is duration and intensity of one’s illness condition in predicting

a move. For instance, when an older adult experiences an acute illness (e.g., health events are relatively short in duration) or they experience moderate forms of disability (e.g., health events are time-bound and sporadic) their illness may be managed with the help of family, friends and neighbors. In such cases, health needs that arise are less likely to necessitate a need to move. In such cases assistance can be provided for short periods until the older person adapts to changes in their health (e.g., periodic visits, phone calls or emails from family and friends). In contrast, as an elderly person *begins* to position themselves in the role of dependent care-receiver (i.e., when health events occur frequently and when they are debilitating and overtax personal resources), and as the ability to meet health needs becomes more difficult, the pressure to seek more supportive housing (e.g., assisted living) may occur. In such cases, the older person may be less inclined to rely on friends and neighbors for care since “friend-ties” tend to lack the normative bonds of obligation and commitment that are generally found with family members.

It was expected that the ability to marshal support and to plan for future care would influence moving. Our findings confirmed the value of asking others for advice when faced with stressors [84]. Those who sought social network advice were less likely to move. It appears that having a social network and enlisting the advice of others benefited older adults facing stressful life situations and confirmed the value of proactive strategies in achieving person-environment fit congruence. In terms of planning for future care, those who engaged in planning were found to be significantly *more likely*, rather than *less likely* to move. These results may reflect unique aspect of planning for future care needs. Making plans for future care may reflect negative outcome expectations and anticipation of a disabled identity [85]. Planning may be a multidimensional construct with different types of plans reflecting different outcome expectations. It has been found that planning for future positive events, purchases, and activities is associated with a higher level of psychological well being among older adults confronting health related stressors [86]. This latter positive orientation to planning may reflect an optimistic and future oriented time perspective [86].

CONCLUSION

This study represents a significant step toward exploring the factors that influence moves undertaken by older adults and the extent to which proactive strategies are enacted as a means to achieve person-environment congruence. There are certain limitations of this study that should be noted. First, despite longitudinal data, we used only Wave 1 predictors to predict moving over a ten-year period. Assessments of change in predictors were not examined. Initial health measures of physical limitations and cognitive impairment were not significant predictors of making a move—contrary to our expectation that poorer health would spur a move. On the other hand, it may be that poor health, as long as it remains relatively stable, does not predict moving, but a change in health does [46]. Considerations of the degree of change (e.g., slight vs. marked) and over what period of time (e.g., decline over a period of years vs. sudden) may help us better understand the complex relationship between health status and residential moves in late life.

Second, we focused only on first moves out of the retirement community. Future studies could expand the scope of moves to include multiple (or subsequent) moves. In doing so, housing trajectories or “housing careers” of older adults could be explored. Such an exploration would advance the field if we re-conceptualize moving as a process rather than a single event and could allow us to see how other life course transitions and trajectories (e.g., family and work) are linked to housing careers.

Third, while results point to the importance of proactive strategies in predicting moving out of a retirement community, we are uncertain as to the underlying mechanisms for these relationships. Two of the three proactive strategies were statistically significant predictors of moving: having made plans for future care and greater ease in marshalling support from others. Coping assistance was not a significant predictor. More specific data is needed on planning and marshalling support to explain why planners are more likely to move than non-planners and why people who have greater ease in marshalling support are less likely to move than those who have greater difficulty in doing so. Because planning for future care was measured as a dichotomous variable, as a result, we only know that plans were made or not. We are not sure if the plans were to move or for other reasons (e.g., will have home health care in order to age-in-place). We also know little about the concreteness of the plans—were they vague thoughts or had action taken toward these plans? Refinement of planning measures to address these issues could be quite valuable in developing interventions for older adults that increase their awareness as to why planning is useful and beneficial as well designing programs that aid in carrying out concrete planning strategies.

Lastly, it should also be noted that the time frame considered between antecedents and the occurrence of the move spanned a relatively long time period (10 years). It is possible that some events have a greater impact if they happen during the year prior to the move (e.g., falls) while other events have a more delayed impact on moving (e.g., widowhood) [32]. In future research it will be useful to consider the temporal impact of stressors on making a move [87].

Research on moving out of active living retirement communities has been limited; most research has focused on characteristics associated with “moving into” a retirement community. This study takes a first step toward understanding agency in later life within the context of health and housing. This study identified that older adults do in fact engage in proactive strategies even when confronted with health-related stressors associated with aging. Such strategies may serve as adaptive measures which contribute to person-environment congruence and ultimately well-being. Nevertheless, future studies would benefit from examining *how* these proactive strategies influence the type of housing moved to and what strategies facilitate aging-in-place.

ACKNOWLEDGEMENT

This study was funded by National Institute on Aging MERIT award, Adaptation to Frailty among Dispersed Elderly (R01-AGO7823), Eva Kahana, Ph.D., Principal Investigator.

REFERENCES

- [1] Guralnik JM. Prospects for the compression of morbidity: the challenges posed by increasing disability in the years prior to death. *J Aging Health* 1991; 3(2):138-54.
- [2] Tuljapurkar S, Li N, Boe C. A universal pattern of mortality decline in the G7 countries. *Nature* 2003; 405: 789-92.
- [3] Manton KG, Gu X. Changes in the prevalence of chronic disability in the United States black and nonblack population above age 65 from 1982 to 1999. *Proc Natl Acad Sci USA* 2001; 98(11): 6354-9.
- [4] Baltes P, Smith J. New frontiers in the future of aging: from successful aging of the young old to the dilemmas of the fourth age. *Gerontology* 2003; 49: 123-35.
- [5] Rowe JW, Kahn RL. Human aging: usual and successful. *Science* 1987; 237(4811): 143-9.
- [6] Rowe JW, Kahn RL. Successful aging. *Gerontologist* 1997; 37(4): 440-3.
- [7] Willcox BJ, Willcox DC, Ferrucci L. Secrets of healthy aging and longevity from exceptional survivors around the globe: lessons from octogenarians to super-centenarians. *J Gerontol Bio Med Sci* 2008; 63(11):1181-5.
- [8] Brown C, Lowis MJ. Psychosocial development in the elderly: An investigation into Erikson's ninth stage. *J Aging Stud* 2003; 17(4): 415-26.
- [9] Tornstam L. Gerotranscendence: A developmental theory of positive aging. New York, NY: Springer Publishing Company 2005.
- [10] Baltes P, Baltes M. Psychological perspectives on successful aging: The model of selective optimization with compensation. In: Baltes P, Baltes M, Eds. *Successful aging: Perspectives from the behavioral sciences*. New York: Cambridge University Press 1990; pp. 1-34.
- [11] Kahana E, Kahana B. Conceptual and empirical advances in understanding aging well through proactive adaptation. In: Bengtson V, Ed. *Adulthood and aging: Research on continuities and discontinuities*. New York, NY: Springer Publishing Company 1996; pp. 18-40.
- [12] Kahana E, Kahana B. Contextualizing successful aging: New directions in age-old search. In: Settersten R Jr, Ed. *Invitation to the life course: A new look at old age*. Amityville, NY: Baywood Publishing Company 2003; pp. 225-55.
- [13] Arai Y, Takayama M, Gondo Y, *et al*. Genetic and environmental determinants of healthy aging. Adipose endocrine function, insulin like growth factor-1 axis, and exceptional survival beyond 100 years of age. *J Gerontol Bio Med Sci* 2008; 63: 1209-18.
- [14] Anderson G, Horvath J. The growing burden of chronic disease in America. *Public Health Rep* 2004; 119: 263-70.
- [15] Centers for Disease Control and Prevention (CDC). The state of aging and health in America. Washington, D.C.: Merck Institute of Aging and Health 2004. <http://www.agingsociety.org/agingsociety/publications/state/index.html> [Accessed Nov 1, 2009].
- [16] Jette AM. Disability trends and transitions. In: Binstock R, George L, Marshall V, Myers G, Schulz J, Eds. *Handbook of aging and the social sciences*. 4th ed. San Diego, CA, USA: Academic Press 1996; pp. 94-116.
- [17] Schachter JP. Geographic mobility: 2002-2003. *Current Population Report* 2004; pp. 20-549.
- [18] Bayer A, Harper L. Fixing to stay: a national survey on housing and home modification issues. Washington, DC: AARP 2000.
- [19] Wagnild G. Growing old at home. In: Pastalan LA, Schwarz B, Eds. *Housing choices and well-being of older adults: Proper fit*. NY, NY: Hawthorn Press 2001; pp. 71-84.
- [20] Pastalan LA, Ed. *Making aging in place work*. New York: Hawthorn Press 1999.
- [21] Lawton MP, Nahemow L. Ecology and the aging process. In: Eisdofer C, Lawton MP, Eds. *Psychology of adult development and aging*. Washington, DC: APA 1973; pp. 619-74.
- [22] Lawton MP. *Environment and aging*. Belmont, CA: Wadsworth Inc. 1980.
- [23] Oswald F, Rowles GD. Beyond the relocation trauma in old age: New trends in today's elders' residential decisions. In: Wahl HW, Tesch-Romer C, Hoff A, Eds. *New dynamics in old age: environmental and societal perspectives*. Amityville, NY: Baywood 2006; pp. 127-52.
- [24] Kahana E. The humane treatment of old people in institutions. *Gerontologist* 1973; 13: 282-8.
- [25] Kahana E, Lovegreen L, Kahana B, Kahana M. Person, environment, and person-environment fit as influences on residential satisfaction of elders. *Environ Behav* 2003; 35(3): 434-53.
- [26] Kahana E. A congruence model of person-environment interaction. In: Lawton MP, Windley PG, Byerts TO, Eds. *Aging and the environment: Theoretical approaches*. New York, NY: Springer Publishing Company 1982; pp. 97-121.
- [27] Kahana E, Liang J, Felton BJ. Alternative models of person-environment fit: Prediction of morale in three homes for the aged. *J Gerontol* 1980; 35(4): 584-95.
- [28] Kahana E. Matching environments to needs of the aged: A conceptual scheme. In: Gubrium J, Ed. *Late life: Communities and environmental policy*. Springfield, IL: Charles C. Thomas Publisher 1974; pp. 201-14.
- [29] Kahana E. Environmental adaptation of the aged. In: Byerts TO, Ed. *Environmental research and aging*. Washington, DC: Gerontological Society 1975; pp. 81-92.
- [30] Colsher PL, Wallace RB. Health and social antecedents of relocation in rural elderly persons. *J Gerontol Bio Sci Med Sci* 1996; 45(1): S32-8.
- [31] Sommers DG, Rowell KR. Factors differentiating elderly residential movers and nonmovers: A longitudinal analysis. *Popul Res Policy Rev* 1992; 11: 249-62.
- [32] Choi NG. Changes in the composition of unmarried elderly women's households between 1971 and 1991. *J Gerontol Soc Work* 1996; 27(1/2):113-31.
- [33] Erickson MA, Krout J, Ewen H, Robison J. Should I stay or should I go? Moving plans of older adults. *J Housing Elderly* 2006; 2(3): 5-22.
- [34] Wilmoth JM. Living arrangement transitions among America's older adults. *Gerontologist* 1998; 38(8): 434-44.
- [35] Bharucha AJ, Pandav R, Shen C, Dodge H, Ganguli M. Predictors of nursing home facility admission: A 12-year epidemiological study in the United States. *J Am Geriatr Soc* 2004; 52(3): 434-9.
- [36] American Association of Homes and Services for the Aging (AA-HSA). *Aging services: The facts*. http://www.aahsa.org/aging_services/default.asp [Accessed June 16, 2007].
- [37] Bradsher JE, Longino CF Jr, Jackson DJ, Zimmermann RS. Health and geographic mobility among the recently widowed. *J Gerontol Psych Sci Soc Sci* 1992; 47: S261-8.
- [38] Chevan A. Holding on and letting go: Residential mobility during widowhood. *Res Aging* 1995; 17(3): 278-302.
- [39] Longino CF Jr, Serow WJ. Regional differences in the characteristics of elderly return migrants. *J Gerontol Psychol Sci Soc Sci* 1992; 47(1): 38-43.
- [40] Soto M, Andrieu S, Gillette-Guyonnet S, Cantet C, Nourhashemi F, Vellas B. Risk factors for functional decline and institutionalization among community-dwelling older adults with mild to severe Alzheimer's disease: one year of follow-up. *Age Ageing* 2006; 35: 308-10.
- [41] Hays JC, Fillenbaum GG, Gold DT, Shanley MC, Blazer DG. Black-white and urban-rural differences in stability of household composition among the elderly. *J Gerontol B Psychol Sci Soc Sci* 1995; 50: S302-11.
- [42] Miller EA, Weissert WG. Predicting elderly people's risk for nursing home placement, hospitalization, functional impairment, and mortality: A synthesis. *Med Care Res Rev* 2000; 57: 259-97.
- [43] Robison JT, Moen P. A life-course perspective on housing expectations and shifts in late midlife. *Res Aging* 2000; 22(5): 499-532.
- [44] McGinnis R. A stochastic model of social mobility. *Am Soc Rev* 1968; 23: 712-22.
- [45] St. John PD, Montgomery PR, Kristjansson B, McDowell I. Cognitive scores, even within the normal range, predict death and institutionalization. *Age Ageing* 2002; 31: 373-8.
- [46] Speare A Jr, Avery R, Lawton L. Disability, residential mobility, and changes in living arrangements. *J Gerontol Soc Sci* 1991; 46(3): S133-42.
- [47] Pastalan LA, Ed. *Housing decisions for the elderly: To move or not to move*. New York, London: Haworth Press 1995.
- [48] Chappell N. Living arrangements and sources of care-giving. *J Gerontol* 1991; 46(1): S1-8.
- [49] Ferraro KF. Health consequences of relocation among the aged in the community. *J Gerontol* 1982; 38(1): 90-6.
- [50] Cohen S, Rodriguez MS. Pathways linking affective disturbances and physical disorders. *Health Psychol* 1995; 14(5): 374-86.

- [51] Hays JC. Living arrangements and health status in later life: A review of the recent literature. *Public Health Nurs* 2002; 19(2): 136-51.
- [52] Richmond TS, Kauder D, Strumpf N, Meredith T. Characteristics and outcomes of serious traumatic injury in older adults. *J Am Geriatr Soc* 2002; 50: 215-22.
- [53] Michel JP, Hoffmeyer P, Klopfenstein C, Bruchez M, Grab B, d'Epinay CL. Prognosis of functional recovery 1 year after hip fracture: Typical patient profiles through cluster analysis. *J Gerontol A Bio Sci Med Sci* 2000; 55: M508-15.
- [54] Agüero-Torres H, von Strauss E, Viitanen M, Winblad B, Fratiglioni L. Institutionalization in the elderly: The role of chronic diseases and dementia. Cross-sectional and longitudinal data from a population-based study. *J Clin Epidemiol* 2001; 54: 795-801.
- [55] Nourhashemi F, Andrieu S, Gillette-Guyonnet S, Vellas B, Albaredo JL, Grandjean H. Instrumental activities of daily living as a potential marker of frailty. A study of 7,364 community-dwelling elderly women (the EPIDOS Study). *J Gerontol A Bio Sci Med Sci* 2001; 56: M448-M53.
- [56] Morley JE. A fall is a major event in the life of an older person. *J Gerontol Med Sci* 2002; 57A(8): M492-M5.
- [57] Cohler BJ, Lieberman MA. Social relations and mental health. *Res Aging* 1980; 2(4): 445-69.
- [58] Cohen S, McKay G. Social support, stress and the buffering hypothesis: A theoretical analysis. In: Baum A, Singer JE, Taylor SE, Eds. *Handbook of psychology and health*. Hillsdale, NJ: Erlbaum 1984; Vol. 4: pp. 253-67.
- [59] House JS, Umberson D, Landis KR. Structures and processes of social support. *Annu Rev Soc* 1988; 14: 293-318.
- [60] Moen P, Fields V, Quick H, Hofmeister H. A life course approach to retirement and social integration. In: Pillemer K, Moen P, Wethington E, Glasgow N, Eds. *Social integration in the second half of life*. Baltimore: Johns Hopkins University 2000; pp. 75-107.
- [61] Thoits P. Stress, coping, and social support: Where are we? What's next? *J Health Soc Behav* 1995; special issue no. 53-79.
- [62] Thoits P. Social support as coping assistance. *J Consult Clin Psychol* 1986; 54(4): 416-23.
- [63] Festinger L. A theory of social comparison processes. *Hum Relat* 1954; 7: 117-40.
- [64] Taylor SE, Bunk BP, Aspinwall LG. Social comparison, stress and coping. *Per Soc Psychol B* 1990; 16(1): 74-89.
- [65] Sorensen S, Pinquart M. Vulnerability and access to resources as predictors of preparation for future care needs in the elderly. *J Aging Health* 2000a; 12: 275-300.
- [66] Sorensen S, Pinquart M. Preparation for future care needs: Styles of preparation used by older Eastern German, United States, and Canadian women. *J Cross Cult Gerontol* 2000b; 15: 349-81.
- [67] Carrese JA, Mullaney JL, Faden RR, Finucane TE. Planning for death but not serious future illness: Qualitative study of homebound elderly patients. *Br Med J* 2002; 3(25): 125-7.
- [68] Walz HS, Mitchell TE. Adult children and their parents' expectations of future elder care needs. *J Aging Health* 2007; 19(3): 482-99.
- [69] Sorensen S, Pinquart M. Developing a measure of older adults' preparation for future care needs. *Int J Aging Hum Dev* 2001; 53: 137-65.
- [70] Kahana E, Lawrence RH, Kahana B, *et al.* Long-term impact of preventive proactivity on quality of life of the old-old. *Psychosom Med* 2002; 64(3): 382-94.
- [71] Borawski EA, Kinney JM, Kahana E. The meaning of older adults' health appraisals: Congruence with health status and determinant of mortality. *J Gerontol B Psychol Sci Soc Sci* 1996; 51B(3): S157-70.
- [72] Fillenbaum GG. Validity and reliability of the MFAQ. Duke University Center for the Study of Aging and Human Department, Multidimensional functional assessment: The OARS methodology. Durham, NC: Duke University 1978.
- [73] Fillenbaum GG. Multidimensional functional assessment of older adults: The Duke older Americans resources and service procedures. Hillsdale, NJ: Lawrence Erlbaum Associates 1988.
- [74] Pfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *J Am Ger Soc* 1975; 34: 433-41.
- [75] Kahana E, Fairchild T, Kahana B. Adaptation. In: Mangen DJ, Peterson W, Eds. *Research instruments in social gerontology: Clinical and social psychology*. Minneapolis, MN: University of Minnesota Press 1982; Vol. 1: pp. 145-93.
- [76] Tabachnick BG, Fidell LS. *Using multivariate statistics*. 4th ed. Boston, MA: Allyn and Bacon 2000.
- [77] SPSS. Version 17.0 for Windows [computer software]. Chicago, IL: SPSS Inc. 2009.
- [78] Peduzzi P, Concato J, Kemper E, Holford TR, Feinstein AR. A simulation study of the number of events per variable in logistic regression analysis. *J Clin Epidemiol* 1996; 49(12): 1373-9.
- [79] Cox DR, Snell EJ. *Analysis of binary data*. 2nd ed. NY: Chapman and Hall 1989.
- [80] Heckman JJ. Sample selection bias as a specification error. *Econometrica* 1979; 47(1): 153-61.
- [81] Beck AT. Cognitive therapy of depression: new perspectives. In: Clayton PJ, Barrett JE, Eds. *Treatment of depression: old controversies and new approaches*. New York, NY: Raven Press 1983; pp. 315-50.
- [82] Lovegreen L, Kahana E, Kahana B. Residential moves in late life: Unpacking post-amenity moves. Unpublished manuscript 2009.
- [83] Hobfoll SE, Schwarzer R, Chon KK. Disentangling the stress labyrinth: Interpreting the meaning of the term stress as it is studied in health context. *Anxiety Stress Coping* 1998; 11: 181-212.
- [84] Gottlieb BH, Ed. *Social networks and social support*. Beverly Hills, CA: Sage Publications Ltd. 1981.
- [85] Kelley-Moore JA, Schumacher JG, Kahana E, Kahana B. When do older adults become "disabled"? Social and health antecedents of perceived disability in a panel study of the oldest old. *J Health Soc Behav* 2006; 47(2): 126-41.
- [86] Kahana E, Kahana B, Zhang J. Motivational antecedents of preventive proactivity in late life: linking future orientation and exercise. *Motivation Emotion* 2005; 29(4): 438-59.
- [87] Settersten RA. *Lives in time and place: The problems and promises of developmental science*. Amityville, NY: Baywood Publishing Company, Inc. 1999.

Received: November 11, 2009

Revised: January 06, 2010

Accepted: February 04, 2010

© Loren D. Lovegreen; Licensee Bentham Open.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.